

1 1. An airbag module for protecting an occupant of a vehicle from impact, the
2 airbag module comprising:

3 an inflator having a flange; and

4 a mounting device comprising a first retention device integrally formed with a
5 mounting plate, wherein the first retention device snaps into engagement with the flange
6 in response to motion of the flange toward the mounting plate to secure the flange in a
7 manner that resists nondestructive disassembly.

8
9 2. The airbag module of claim 1, wherein the flange comprises an outer edge,
10 wherein the first retention device overlaps the outer edge to grip the inflator.

11
12 3. The airbag module of claim 2, wherein the first retention device comprises
13 a clip comprising a shank extending from the mounting plate and a head comprising a
14 retention surface that contacts the flange proximate a straight portion of the outer edge,
15 wherein the shank is deformable to permit flexure of the first retention device.

16
17 4. The airbag module of claim 1, wherein the first retention device comprises
18 a snap comprising a shank extending from the mounting plate and a head comprising a
19 retention surface that contacts the flange proximate a hole formed in the flange, wherein
20 the shank is deformable to permit flexure of the first retention device.

1 5. The airbag module of claim 1, wherein the mounting device further
2 comprises a second retention device disposed opposite the first retention device with
3 respect to the mounting plate to permit installation of the flange generally between the
4 first and second mounting devices.

5
6 6. The airbag module of claim 1, wherein the mounting device further
7 comprises two rigid retainers disposed to slidably receive the inflator, wherein the first
8 retention device acts to prevent nondestructive sliding removal of the inflator from the
9 rigid retainers.

10
11 7. The airbag module of claim 6, wherein each of the rigid retainers
12 comprises a retainer shank and a retainer head having a retainer surface generally facing
13 the mounting plate to grip the flange against the mounting plate.

14
15 8. The airbag module of claim 1, wherein the mounting device comprises a
16 periphery having one or more mounting holes to facilitate installation of the mounting
17 device in a vehicle.

18
19 9. The airbag module of claim 1, wherein the mounting device comprises a
20 recess in which the inflator is mounted.

21
22 10. The airbag module of claim 1, wherein the mounting device is shaped for
23 use in a passenger side airbag mounting port.

1 11. The airbag module of claim 9, wherein the mounting device comprises an
2 outer rim comprising a generally rectangular shape.

3
4 12. The airbag module of claim 9, wherein the inflator comprises an axis of
5 symmetry, wherein the inflator is shorter along the axis of symmetry than a width of the
6 inflator perpendicular to the axis of symmetry.

7
8 13. The airbag module of claim 1, further comprising an inflatable cushion
9 having an inlet disposed to receive inflation gas from the inflator.

1 14. An inflator mounting assembly for an airbag module for protecting an
2 occupant of a vehicle from impact, the inflator mounting assembly comprising:
3 an inflator having a flange; and
4 a mounting device comprising a mounting plate and a retention device integrally
5 formed with the mounting plate, wherein the retention device comprises a retention
6 surface disposed to contact the flange, wherein the retention device flexes from a natural
7 configuration to receive the flange and moves back towards the natural configuration in
8 response to insertion of the inflator to secure the flange against a planar surface of the
9 mounting plate.

10
11 15. The inflator mounting assembly of claim 14, wherein the mounting device
12 further comprises a second retention device disposed opposite the first mounting device
13 with respect to the mounting plate to permit installation of the flange generally between
14 the first and second mounting devices.

15
16 16. The inflator mounting assembly of claim 14, wherein the mounting device
17 further comprises two rigid retainers disposed to slidably receive the inflator, wherein the
18 first retention device acts to prevent nondestructive sliding removal of the inflator from
19 the rigid retainers.

20
21 17. The inflator mounting assembly of claim 14, wherein the mounting device
22 is shaped for use in a passenger side airbag mounting port.

1 18. The inflator mounting assembly of claim 14, wherein the inflator
2 comprises an axis of symmetry, wherein the inflator is shorter along the axis of symmetry
3 than a width of the inflator perpendicular to the axis of symmetry.

4
5 19. The inflator mounting assembly of claim 14, wherein the retention surface
6 is disposed at an angle with respect to the planar surface such that urging withdrawal of
7 the flange from the mounting plate does not induce flexure of the retention device from
8 the natural configuration.

1 20. A mounting device for securing an inflator in a vehicle, the mounting
2 device comprising:

3 a mounting plate comprising a planar surface on which the inflator contacts the
4 mounting device; and

5 a plurality of retention devices integrally formed with the mounting plate and
6 extending from the planar surface, wherein each of the retention devices snaps into
7 engagement with the inflator in response to insertion of the inflator to secure the inflator
8 in a manner that resists nondestructive disassembly.

9
10 21. The mounting device of claim 20, wherein each of the retention devices
11 comprise a shank and a head having a retention surface generally facing the mounting
12 plate to grip the inflator against the mounting plate.

13
14 22. The mounting device of claim 20, wherein each of the retention devices
15 comprises a retention surface disposed at an angle with respect to the planar surface such
16 that urging withdrawal of the inflator from the mounting plate does not induce flexure of
17 the retention devices from the natural configuration.

18
19 23. The mounting device of claim 20, wherein the retention devices are
20 disposed to permit installation of the inflator generally between the retention devices.

1 24. The mounting device of claim 20, wherein the mounting device further
2 comprises two rigid retainers disposed to slidably receive the inflator, wherein each of the
3 retention devices act to prevent nondestructive sliding removal of the inflator from the
4 rigid retainers.

5
6 25. The mounting device of claim 20, wherein the mounting device comprises
7 a periphery having one or more mounting holes to facilitate installation of the mounting
8 device in a vehicle.

1 26. An airbag module for protecting an occupant of a vehicle from impact, the
2 airbag module comprising:

3 an inflator having a flange; and

4 a mounting device comprising a mounting plate and a first retention device
5 disposable to extend from the mounting plate to overlap a straight portion of an outer
6 edge of the flange to grip the flange against the mounting plate, wherein the mounting
7 plate further comprises a second retention device disposed opposite the first retention
8 device with respect to the mounting plate to permit installation of the flange generally
9 between the first and second mounting devices, where in the mounting plate comprises a
10 planar surface.

11
12 27. The airbag module of claim 26, wherein the first retention device
13 comprises a clip comprising a shank and a head comprising a retention surface that
14 contacts the flange proximate a straight portion of the outer edge, wherein the first
15 retention device is deformable to permit flexure of the first retention device.

16
17 28. The airbag module of claim 26, wherein the mounting device further
18 comprises two rigid retainers disposed to slidably receive the inflator, wherein the first
19 retention device acts to prevent nondestructive sliding removal of the inflator from the
20 rigid retainers.

1 29. A method for assembling an airbag module for protecting an occupant of a
2 vehicle from impact, the airbag module comprising an inflator having a flange and a
3 mounting device comprising a retention device integrally formed with a mounting plate,
4 the method comprising:

5 aligning the inflator with the mounting plate;

6 actuating the inflator toward the mounting plate to induce the retention device to
7 flex from a natural configuration to receive the flange; and

8 further actuating the inflator toward the mounting plate to secure the inflator
9 against the mounting plate by permitting motion of the retention device back towards the
10 natural configuration.

11
12 30. The method of claim 29, wherein the retention device comprises a snap,
13 wherein aligning the inflator with the mounting plate further comprises aligning the snap
14 with a hole formed in the flange.

15
16 31. The method of claim 29, wherein the retention device comprises a clip,
17 wherein aligning the inflator with the mounting plate further comprises aligning the clip
18 with a straight portion of an outer edge of the flange.

19
20 32. The method of claim 29, wherein the mounting device further comprises
21 rigid retainer comprising a retainer surface, wherein aligning the inflator with the
22 mounting plate further comprises disposing the flange between the retainer surface and
23 the mounting plate of the mounting device.

1 33. A method of assembling an airbag module for protecting an occupant of a
2 vehicle from impact, the airbag module comprising an inflator having a flange
3 comprising an outer edge having a straight portion, and a mounting device comprising a
4 first and a second retention device extending from a mounting plate, the method
5 comprising:

6 aligning a straight outer edge of the flange with the first and second retention
7 devices and the mounting plate; and

8 disposing the straight outer edge, the first and second retention device, and the
9 mounting plate such that the first and second retention devices overlap a straight portion
10 of the outer edge to grip the flange against the mounting plate.

11
12 34. The method of claim 33, wherein disposing the straight outer edge, the
13 retention device, and the mounting plate comprises flexing the first and second retention
14 devices from a natural configuration to receive the flange and moving back towards a
15 natural configuration to grip the flange against the mounting plate in a manner that resists
16 nondestructive disassembly.

1 35. The method of claim 33, wherein the mounting device comprises a third
2 retention device, wherein the first and second retention devices comprise two rigid
3 retainers integrally formed with the mounting plate, wherein the mounting plate
4 comprises a planar surface, wherein disposing the straight portion of the outer edge, the
5 first and second retention devices, and the mounting plate such that the retention devices
6 overlap the straight portion comprise:
7 sliding the flange between two rigid retainers such that the flange is disposed
8 between a contact surface of each rigid retainer and the mounting plate to induce flexure
9 of the third retention device; and
10 moving the retention device back towards the natural configuration to resist
11 nondestructive disassembly of the inflator and the mounting device.